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UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Niebuhr et al.  
Serial No.: 10/849,618  
Filed: 05/19/2004  
Art Unit: 1773  
Examiner: Zacharia, Ramsey E.  
Title: COMPOSITE VEHICLE PART AND METHOD OF  
MANUFACTURING A COMPOSITE VEHICLE PART

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

APPEAL BRIEF

Dear Sir:

Appellant submits this Appeal Brief pursuant to the Notice of Appeal filed March 19, 2007. Fees in the amount of \$500.00 may be charged to Deposit Account No. 50-1482 in the name of Carlson, Gaskey & Olds. Any additional fees or credits may be charged or applied to the same Deposit Account.

REAL PARTY IN INTEREST

The real party in interest is ArvinMeritor GmbH, assignee of the present invention.

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**RELATED APPEALS AND INTERFERENCES**

There are no prior or pending appeals, interferences or judicial proceedings related to this appeal, or which may directly affect or may be directly affected by, or have a bearing on, the Board's decision in this appeal.

**STATUS OF CLAIMS**

Claims 1-13 and 22-23 are pending, rejected, and appealed. Claims 14-21 are cancelled.

**STATUS OF AMENDMENTS**

All amendments and responses have been entered and considered.

**SUMMARY OF CLAIMED SUBJECT MATTER**

The subject invention relates to a method for manufacturing a composite part, such as a vehicle part, which is visible in an installed state, such as a mount-on car body panel. Page 1, lines 7-9; Figures 1-6.

Independent claim 1 is directed to a method for manufacturing a composite part 12 having an outer skin 14 that is visible when the composite part 12 is installed in a vehicle. Page 5, lines 17-25; Figure 1. The method includes the steps of:

(a) providing a foil part 16 having the outer skin 14, the foil part 16 having a removable protective foil 22 disposed on a front side of the outer skin 14, the removable protective foil 22 having an outer side (page 5, lines 23-25; page 6, lines 15-18; page 7, lines 12-14; Figures 2 and 6);

(b) reworking the removable protective foil 22 to smooth a surface of the outer side (page 6, lines 27-30; Figure 4);

(c) placing the foil part 16 together with the removable protective foil 22 in a die 50 subsequent to step (b) (page 7, lines 1-3; Figure 5); and

(d) applying a plastic layer 52 via a high-pressure process on a rear side of the outer skin 14 (page 7, lines 3-8; Figure 5).

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**GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

A. Claims 1-11, 13, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art (AAPA) of paragraph [0006] of the specification in view of US Patent No. 5,989,480 to Yamazaki.

B. Claims 12 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art (AAPA) of paragraph [0006] of the specification in view of US Patent No. 5,989,480 to Yamazaki and further in view of US Patent No. 3,970,508 to Gossie.

**ARGUMENT****A. Obviousness Rejection Based on APA and Yamazaki**

Claims 1-11, 13, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art (AAPA) of paragraph [0006] of the specification in view of US Patent No. 5,989,480 to Yamazaki.

**Claims 1, 2, and 5-11**

Claim 1 recites a method for manufacturing a composite part having an outer skin that is visible when the composite part is installed in a vehicle, comprising:

- (a) providing a foil part having the outer skin, the foil part having a removable protective foil disposed on a front side of the outer skin, the removable protective foil having an outer side;
- (b) reworking the removable protective foil to smooth a surface of the outer side;
- (c) placing the foil part together with the removable protective foil in a die subsequent to step (b); and
- (d) applying a plastic layer via a high-pressure process on a rear side of the outer skin.

Paragraph [0006] of the specification (AAPA) recites:

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In one prior method for manufacturing a composite part, a foil that has yet to be back-foamed (hereinafter termed "foil part") is delivered to a part manufacturer with a protective foil on its exterior side. Due to the protective foil, the exterior side of the foil part, which will later be visible on the completed composite part, is not damaged during shipment. The component part that will be finished later is also delivered to an automobile manufacturer with the protective foil on it. The protective foil is removed just before assembling the composite part onto the vehicle in order to avoid damage or contamination.

This paragraph, does not disclose steps (b), (c), or (d) in the order specified. The examiner has admitted that AAPA does not disclose step (b) as defined in claim 1. However, the examiner argues that Yamazaki teaches this step and states that it would be obvious to modify AAPA to include this step. Appellant respectfully disagrees.

Yamazaki does not disclose, suggest, or teach the step of reworking a removable protective foil as defined in the claim. The insert film disclosed in Yamazaki is not a removable protective foil, and is instead a patterned decorative layer that forms a final part of the composite part itself. As set forth at col. 5, line 60 to col. 6, line 19 of Yamazaki:

A pattern layer, a bonding layer, etc. are sequentially laminated on a base sheet in the insert film 7. The base sheet is not released in some cases after a molding resin is bonded to the insert film 7. The base sheet is formed of various kinds of resin, e.g., polyethylene terephthalate, acryl, thermoplastic elastomer, etc. The pattern layer applies decorative features or functions to a surface of the molded product. The pattern layer has a general printing pattern or a conductive pattern formed of a conductive material, etc. A resin binder and a pigment or dye are used for the pattern layer. A resin binder and an opacifying metallic pigment or inorganic pigment, etc. are utilizable as well for the pattern layer. The bonding layer is a layer bonding the insert film 7 with the molded product.

Thus, the insert film 7 is molded within the product itself. As such, this insert film cannot be considered as being removable. One of ordinary skill in the art would not consider such a layer as corresponding to the claimed removable protective foil.

Even if the insert film layer 7 of Yamazaki can somehow be considered as corresponding to the claimed removable protective foil, Yamazaki still does not teach "reworking" of such an

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element, before the foil part, together with the removable protective foil, are placed in a die. The examiner argues that this “reworking” is taught at col. 14, lines 56-67 of Yamazaki; however, this section merely states that the insert film is positioned within the mold under constant tension. As stated at col. 14, lines 56-67:

At this time, before the insert film 7 is pressed to the fixed mold 11 by the main clamp device 4, a constant tension is impressed to the insert film 7 by the take-out roll device 2 and sub clamp device 6, and consequently, the whole surface of the insert film 7 can be uniformly extended when brought in tight contact with the cavity 10 of the fixed mold 11 or the like. The insert film 7 is never held in touch with the fixed mold 11 while the film 7 is wrinkled or twisted. The insert film 7 may be pinched again by the pulled-out pinching device 30 and a fixed tension may be adjusted to be applied to the insert film 7 by the pinching device 30 and sub clamp device 6.

This is not a “reworking” of the insert film, and one of ordinary skill in the art would not consider this tensioning of the Yamazaki insert film as corresponding to the claimed step of reworking. The tensioning of the insert film of Yamazaki is merely a part of the positioning step of placing the insert film in the die and does not itself constitute a “reworking” of the foil.

The examiner further argues that this is considered “reworking” when combined with the process of AAPA because the foil of AAPA has already been “worked” to some extent by disposing it on an outer skin before sending it for back foaming. See Advisory Action of March 5, 2007. Contrary to the examiner’s assertion, one of ordinary skill in the art would not consider the disposition of a foil on a part as “working” the foil. Again, this is simply a positioning of the foil on the part and cannot itself constitute a working of the foil. Thus, there is no “reworking” of the foil found in AAPA or Yamazaki.

Finally, the examiner has argued that it would have been obvious to one of ordinary skill in the art to rework the foil of AAPA to smooth its surface before putting the foil in a die. As set forth at MPEP 2143, to establish a *prima facie* case of obviousness there must be some suggestion or motivation to modify the reference, there must be a reasonable expectation of success, and the reference must teach or suggest all of the claim limitations. The teaching or suggestion to make the

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claimed modification and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Appellant respectfully asserts that there is no motivation or suggestion to modify AAPA in the manner proposed by the examiner.

The identification of the problem and the discussion of the inventive solution are only found in appellant's disclosure. Appellant was seeking to provide a composite part, as claimed, which has an excellent surface quality such that there is visual compatibility with any adjacent painted parts so that the vehicle will have a uniform appearance. See paragraph [003]. As discussed in appellant's disclosure, providing the protective foil on the foil part, however, does not completely prevent surface damage of the foil part because any contaminants in the protective foil will create raised or thickened locations in the protective foil. These raised or thickened locations can be pressed into the foil part during subsequent back foaming or injection molding steps, making the surface quality of the foil part less than desirable. See paragraphs [019]-[020]. To avoid the above-mentioned disadvantage, appellant's invention involves a reworking step that reworks the protective foil on its outer side before the foil part is back-foamed or injection-molded on its rear side. See paragraph [021].

As discussed above, Yamazaki does not disclose, suggest, or teach any type of reworking of a removable protective foil. There is also no discussion in Yamazaki of a problem with surface quality of a part to which the insert film of Yamazaki is attached. Further, there is no suggestion in Yamazaki that tensioning of an insert film within a die before it is attached to a part, such as that disclosed by Yamazaki, would be an appropriate solution for improving the surface quality of a composite body part, such as that of appellant's, which is covered by the removable protective foil. Thus, the only teaching and suggestion to make the claimed modification is found in appellant's disclosure, which cannot be used as the basis of a suggestion or motivation to make the modification. One of ordinary skill in the art would have found no reason, suggestion, or incentive for attempting to combine these references so as to arrive at the subject matter of claim 1 other than through the luxury of hindsight accorded one who first viewed appellant's disclosure.

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As such, appellant respectfully asserts that claim 1 is allowable over the recited combination. For similar reasons claims 2 and 5-11 are also allowable.

### **Claim 3**

For the reasons set forth above with regard to claim 1, claim 3 is also allowable over the recited combination. Further, claim 3 recites the additional step of reshaping the foil part after step (b). The examiner argues that the pressure of back foaming causes at least some reshaping to conform the foil to the mold surface as set forth in claim 3. The examiner further argues that the backing foaming in the process of AAPA occurs after step (b). See Advisory Action of March 5, 2007.

Claim 3 must be read in light of claim 1 from which claim 3 depends. Claim 3 recites reshaping of the foil part, which has an outer skin with the removable protective foil being disposed on a front side of the outer skin. Step (b) recites the step of reworking the removable protective foil to smooth a surface of the outer side, which is done before step (c). The reshaping of the foil part is done after step (b) as claimed. Thus, "reshaping" identified by the examiner cannot be a result of back foaming.

As such, appellant respectfully asserts that claim 3 is allowable over the recited combination.

### **Claim 4**

For the reasons set forth above with regard to claim 1, claim 4 is also allowable. Further, claim 4 recites the step of reshaping the foil part after step (a) and before step (b), which as defined in claim 1 is before step (c). The examiner argues that AAPA "suggests" the reshaping step set forth in claim 4. The examiner further argues that the "reshaping" of claim 4 can "reasonably be interpreted so broadly as occurring during the shipping of the foil and the skin." Appellant disagrees and asserts that such a broad interpretation is not reasonable.

Claims in a patent application are to be given their broadest reasonable interpretation, with this interpretation being consistent with the specification of the patent application (see, for example,

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In re Zletz, 893 F.2d 319,321; 13 USPQ2d 1320, 1322 (Fed. Cir. 1989)). Further, the terms in the claims should be construed as one of ordinary skill in the art would construe them (see, for example, Specialty Composites v. Cabot Corp. 845 F.2d 981, 986; 6 USPQd 1601, 1604 (Fed. Cir. 1988)). Further, as discussed in Phillipps v. AWH Corp., 415 F.3rd 1303, 1315; 75 USPQ2d, 1321, 1327 (Fed. Cir. 2005), the claims do not stand alone and are part of a fully integrated written instrument with a specification that concludes with the claims. Thus, the claims must be read in view of the specification, of which they are a part. As such, the examiner's interpretation can be broad but it must be reasonable.

The specification describes the "reshaping" in paragraph [0034] for example, which describes a deep-drawing process. Then the specification describes the reworking process of the protective foil, which occurs after the "reshaping" as defined in claim 4. One of ordinary skill in the art would never interpret the claimed "reshaping" as occurring during the shipping of the foil and the skin. Thus, appellant asserts that the examiner's position is not reasonable and asserts that the AAPA does not suggest or teach the order of steps set forth in claim 4. As such, claim 4 is allowable over the recited references.

### **Claim 22**

Claim 22 recites that step (a) is performed prior to step (b), and step (c) is performed prior to step (d). The examiner argues that AAPA "suggests" the order of the steps of 22. AAPA clearly does not suggest this order.

Claim 22 requires the provision of a foil part with a removable protective foil disposed on a front side of the outer skin, wherein the removable protective foil has an outer side. Claim 22 then requires a subsequent reworking of the removable protective foil to smooth a surface of the outer side, which is followed in time by placing the foil part together with the removable protective foil in a die subsequent to the reworking step, and which is followed in time by applying a plastic layer via a high-pressure process on a rear side of the outer skin.

AAPA does not suggest this order. AAPA only states that a part is delivered to a part manufacturer with a protective foil on its exterior side where the part can then be back-foamed. See

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paragraph [0006]. There is no disclosure, suggestion, or teaching found anywhere in AAPA that would indicate that the protective foil is reworked after being applied to a foil part and *before* placing the foil part together with the removable protective foil in a die with the subsequent application of a plastic layer via a high-pressure process. The examiner argues that the order of steps is suggested because “any lack of smoothness in the foil/outer skin combination would not be a concern to one of ordinary skill in the art until it is provided in step a, and the back foaming of step d would clearly occur after the positioning of the foil/outer skin in a die.” See Advisory Action of March 5, 2007.

The examiner’s argument addresses the order of steps (a) and (d) relative to each other but does not explain how AAPA “suggests” that a “reworking” of the protective foil, i.e. step (b), should occur before step (c). The examiner argues that the lack of smoothness is a concern after step (a) but offers no explanation of why the step of reworking the protective foil should occur before step (c). The examiner’s explanation would only support a solution for addressing the lack of smoothness that would occur after step (a). The examiner’s explanation offers no reason why this step should occur *before* steps (c) and (d) as required by claim 22. Again, appellant respectfully requests an indication of where in AAPA it is suggested that step (b) occurs between steps (a) and (c).

Further, the examiner has admitted that AAPA does not disclose performing step (b) and has relied on Yamazaki for this modification. As discussed above, appellant has disputed the teachings of Yamazaki as being relevant to a removable protective foil as claimed. However, even if the insert film of Yamazaki can be construed as corresponding to the claimed removable protective foil, Yamazaki does not disclose, suggest, or teach “reworking” this film after it has been attached to a foil part as defined in claim 22. The insert film of Yamazaki is “tensioned” *prior* to being attached to any type of part. See Figure 16. Thus, Yamazaki teaches away from the claimed order of steps by tensioning of the insert film prior to bonding the insert film to any other component or layer.

If AAPA were to be modified with the teachings of Yamazaki, all that would occur is a tensioning of the protective foil *before* it was even applied to the foil part. This tensioning would thus have to occur before step (a). The examiner has already argued that any lack of smoothness

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would only be a concern after step (a) has already occurred. The examiner has relied upon Yamasaki to disclose step (b); however, the examiner's "reworking" step taught by Yamasaki would not even address the examiner's identification of the problem. In other words, the examiner has identified the problem as occurring after step (a), but Yamasaki's supposed solution would clearly have to occur before step (a). As such, Yamasaki does not suggest the order of steps claimed.

As neither AAPA nor Yamazaki disclose, suggest, or teach the claimed order of steps, claim 22 is allowable over the recited combination.

#### **B. Obviousness Rejection Based on APA and Yamazaki and Gossie**

Claims 12 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (AAPA) of paragraph [0006] of the specification in view of US Patent No. 5,989,480 to Yamazaki and further in view of US Patent No. 3,970,508 to Gossie. For the reasons set forth above, claims 12 and 23 are also allowable over the recited combination. Gossie does not make up for the deficiencies of Yamasaki and AAPA. Additional reasons why claims 12 and 23 are allowable over the recited combination are set forth below.

#### **Claim 12**

Claim 12 recites that step (b) includes polishing the removable protective foil on the outer side. The examiner argues that Gossie discloses smoothing film by hand to remove wrinkles, referring to col. 1, lines 5-17. This section of Gossie merely recites that a decal is smoothed by hand with a squeegee to remove wrinkles.

Heretofore, in the transfer or application of transfer films of decals to surfaces to be decorated, such films have usually been smoothed by hand with the aid of a squeegee or similar device to remove blisters or wrinkles and bubbles of air or of a solvent, such as water, which may exist or occur between said films and the surfaces to which such films are applied. The performance of such manual operations to smooth said transfer films and remove said bubbles etc. is relatively slow, difficult and uneconomical and, therefore, the apparatus of the present

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invention was developed to provide for faster and more economical decal smoothing, that is, automatic smoothing of the transfer films of the decals.

First, a decal is not a removable protective foil as defined in the claims. A decal is included with the final part, i.e. a decal is applied to form the final part, and remains visible after final assembly. The decal is not a protective layer that is subsequently *removed* to show a final exterior surface of an underlying part. The purpose of a decal is to remain on a part for decorative purposes.

Second, smoothing with a squeegee cannot be reasonably construed as corresponding to the claimed "polishing" step. One of ordinary skill in the art simply would not consider using a squeegee to smooth out wrinkles in a decal as corresponding to the claimed step of polishing the removable protective foil of a composite part as defined in the claims.

Finally, if AAPA were to be modified with the teachings of Gossie, the result would be the application of a decal after the protective foil has been removed from the final composite part. The decal would then be squeegeed. This modification does not, and cannot, meet the claim limitation of "polishing" the protective foil before it is placed in the die defined in step (c).

Thus, for the many reasons set forth above claim 12 is allowable over the recited combination.

### Claim 23

Claim 23 is allowable for the same reasons as claim 12. Further, claim 23 recites the additional steps of polishing the removable protective foil to provide a polished surface on the outer side, and placing the polished surface against a die surface. The examiner relies on Gossie to teach a polished surface as claimed, however, as discussed above the examiner's "surface" is a decal surface that is intended to be the visible surface of the part. Gossie does not disclose, suggest, or teach any type of polishing of a removable protective foil. Further, there is no disclosure in any of the references of subsequently placing such a polished surface against a die surface as claimed.

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Thus, appellant respectfully asserts that claim 23 is allowable over the recited combination.

**CONCLUSION**

For the reasons set forth above, the rejection of all claims is improper and should be reversed. Appellant earnestly requests such an action.

Respectfully submitted,

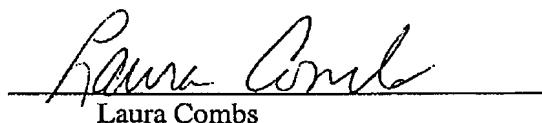
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Dated: May 15, 2007

**CERTIFICATE OF TRANSMISSION UNDER 37 CFR 1.8**

I hereby certify that this correspondence is being facsimile transmitted to the United States patent and Trademark Office, fax number (571) 273-8300, on May 15, 2007.

  
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**CLAIMS APPENDIX**

1. A method for manufacturing a composite part having an outer skin that is visible when the composite part is installed in a vehicle, comprising:

- (a) providing a foil part having the outer skin, the foil part having a removable protective foil disposed on a front side of the outer skin, the removable protective foil having an outer side;
- (b) reworking the removable protective foil to smooth a surface of the outer side;
- (c) placing the foil part together with the removable protective foil in a die subsequent to step (b); and
- (d) applying a plastic layer via a high-pressure process on a rear side of the outer skin.

2. The method as recited in Claim 1, wherein the high-pressure process used in step (d) is selected from the group consisting of back-foaming and injection-molding.

3. The method as recited in Claim 1, further comprising reshaping the foil part after step (b).

4. The method as recited in Claim 1, further comprising reshaping the foil part after step (a) and before step (b).

5. The method as recited in Claim 1, further comprising plastically reshaping the foil part under an influence of heat.

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6. The method as recited in Claim 1, further comprising reshaping the foil part to obtain a trough-like shape.

7. The method as recited in Claim 1, wherein the foil part comprises a thermoplastic material.

8. The method as recited in Claim 1, wherein the foil part includes a two-layer co-extruded foil.

9. The method as recited in Claim 1, further comprising introducing a plurality of reinforcing fibers into the plastic layer.

10. The method as recited in Claim 1, wherein the high-pressure process used in step (d) is selected from the group consisting of back-foaming and injection-molding, and wherein the method includes a step of introducing a plurality of glass fibers into the plastic layer.

11. The method as recited in Claim 10, wherein the step of introducing the plurality of glass fibers into the plastic layer is conducted via a Long Fiber Injection method.

12. The method as recited in Claim 1, wherein step (b) comprises polishing the removable protective foil on the outer side.

13. The method as recited in Claim 1, wherein the composite part is a mount-on vehicle body panel.

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22. The method as recited in claim 1 wherein step (a) is performed prior to step (b), and step (c) is performed prior to step (d).

23. The method as recited in claim 1 wherein step (b) comprises polishing the removable protective foil to provide a polished surface on the outer side, step (c) includes placing the polished surface against a die surface, and step (d) includes applying the plastic layer to the foil part while the polished surface abuts against the die surface.

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## EVIDENCE APPENDIX

**None**

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**RELATED PROCEEDINGS APPENDIX**

**None**